July 11, 1961 C. PEARSON, JR 2,991,575

TOY WHICH SIMULATES THE PERCOLATING ACTION OF A PERCOLATOR

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Fig. 1.

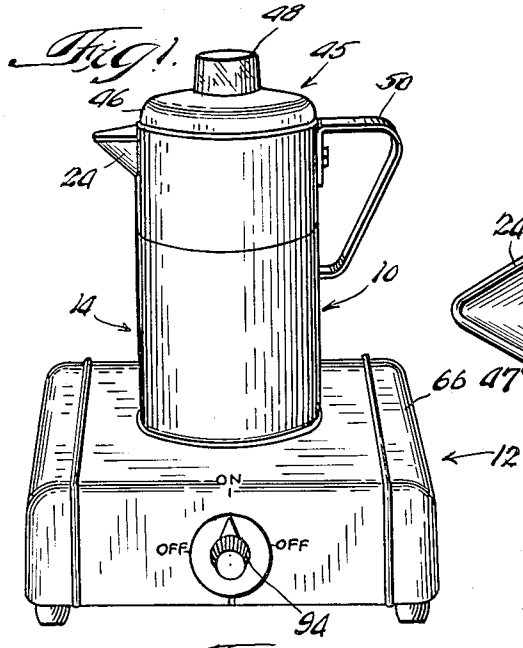


Fig. 3.

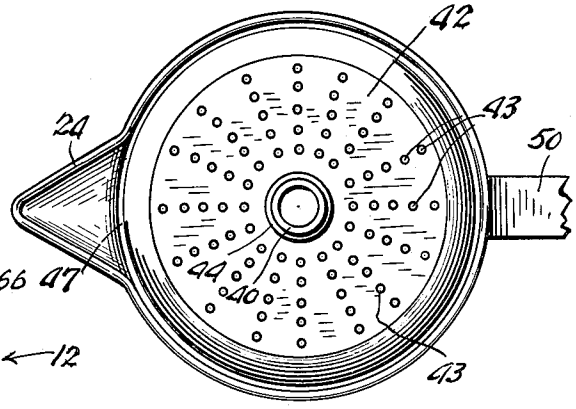


Fig. 4.

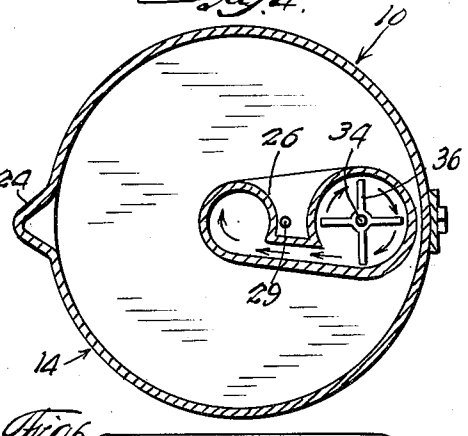


Fig. 5.

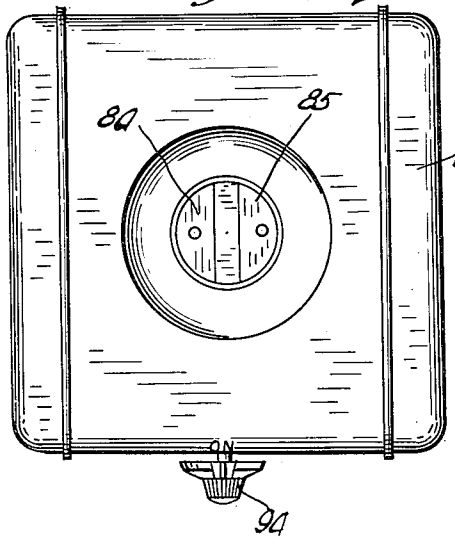
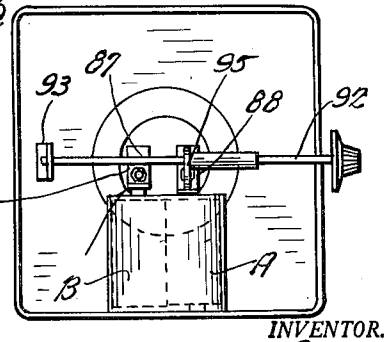


Fig. 6.



INVENTOR.

Charles Pearson Jr.

BY. Mary R. Krauch

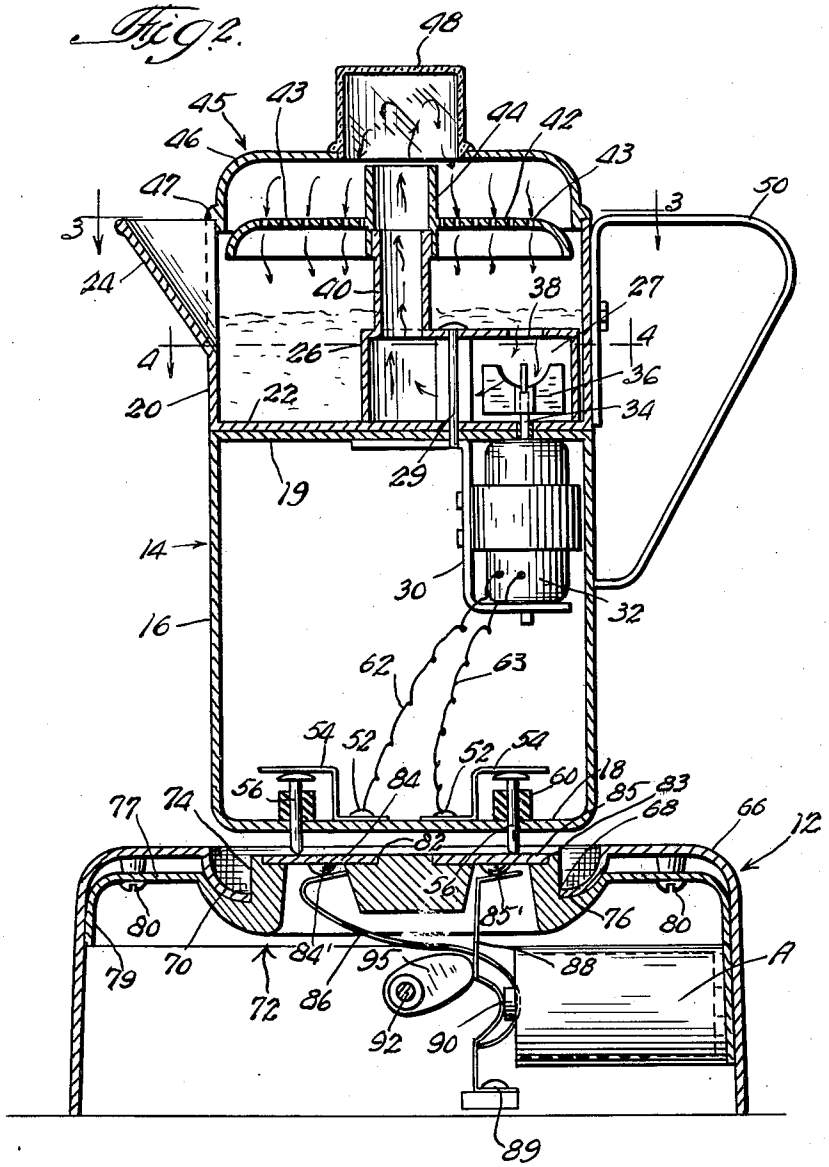
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TOY WHICH SIMULATES THE PERCOLATING ACTION OF A PERCOLATOR

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Fig. 2.



INVENTOR.

Charles Pearson Jr

BY Max P. Kraus

Atty.

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TOY WHICH SIMULATES THE PERCOLATING ACTION OF A PERCOLATOR

Charles Pearson, Jr., 396 Huntington Lane, Elmhurst, Ill.

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6 Claims. (Cl. 40—106.22)

This invention relates to a toy which simulates the percolating action of a percolator.

One of the objects of this invention is to provide a toy which looks like a percolator and which produces a simulated boiling water appearance, similar to that visible in conventional coffee percolators and the like.

Another object of this invention is to provide a simulated percolator and a simulated heating unit which are conjointly operated to produce a simulated percolating action in the percolator without heating the liquid therein.

Another object of this invention is to provide a toy which is safe, which is inexpensive, and which will provide a play action simulating that of heating a percolating unit, such as a coffee maker.

It is well known that children in their play like to utilize products in the kitchen which are used by the parents, therefore, it is an object of this invention to provide a toy comprising a simulated percolator and a simulated heating unit therefor, which when operated will cause the liquid or water in the percolator to appear as if it was boiling and percolating, similar to that of the conventional coffee percolator. This action, however, is produced without heating the liquid or water and is perfectly safe for even the youngest of children.

Other objects will become apparent as this description progresses.

In the drawings:

FIGURE 1 is a perspective view of this invention showing the simulated percolating unit and the simulated heating unit.

FIGURE 2 is an enlarged longitudinal cross-sectional view of the structure shown in FIGURE 1.

FIGURE 3 is a view taken on lines 3—3 of FIGURE 2.

FIGURE 4 is a view partly in cross-section taken on line 4—4 of FIGURE 2.

FIGURE 5 is a top view of the simulated heating unit, and

FIGURE 6 is a reduced plan view showing certain of the parts in the base of the simulated heating unit.

The simulated percolator is generally designated by the numeral **10** and the simulated heating unit is indicated generally by the numeral **12**. The simulated percolator **10** will be first described.

The simulated percolator in appearance is like that of the conventional coffee percolator, except that it is smaller in size. The percolator includes a lower section **14**, having a hollow body **16** closed at the lower end to provide a bottom **18** and open at the upper end. The upper end is closed by a circular plate **19** which is secured to the upper end of the body **16**. A small electric motor, to be subsequently described, is secured within the hollow body **16**. The simulated percolator has an upper container section **20** provided with a bottom wall **22** which rests on the plate **19** of the lower section. The upper container section **20** has a spout **24** at the forward end.

Supported inside the upper container section **20** is a housing **26** which is open at the bottom and rests on the bottom wall **22** of the upper section so that the bottom wall **22** completes the housing **26**. Within the housing **26** there is a pump chamber **27** and a trough or channel **28** which leads from the pump chamber and extends forwardly thereof to connect with the column to be described. The top of the housing **26** is closed, except for certain openings which will be described. The shape of said housing, pump chamber and trough is best shown in plan view in FIGURE 4. The housing **26** is secured in position by a fastening member such as a bolt **29**. The upper enlarged end of said fastening member engages the top of the housing **26**, with the opposite end of said bolt passing through suitably alined openings in the bottom wall **22** and upper wall **19**, and secured to said bolt, as best shown in FIGURE 2, is a bracket member **30** which is supported inside the lower section **14**.

A small electric motor **32** is suitably secured to said bracket so that the motor is supported in a vertical position, with the motor shaft **34** extending vertically through two alined openings of the two walls **22** and **19** and into the interior of the pump chamber **27**. A propeller **36**, preferably of four blades, is secured to the end of the motor shaft **34**. The propeller **36** rotates within the pump chamber **27**.

The top of housing **26** has an opening **38** in axial alinement with the motor shaft **34** so that the liquid within the upper container section **20**, as will be subsequently described, can flow into the pump chamber **27**. The top forward end of the housing **26** is provided with an enlarged opening within which is secured a tubular member **40**.

Supported on said tubular member **40** is a generally convex shaped plate **42** which is provided with a series of spaced apertures **43**, best shown in FIGURES 2 and 3. The plate has a central tubular shaped hub portion **44**, the lower part of which telescopes over the vertical tubular section **40** and is secured thereon. A portion of the hub **44** extends upwardly of the convex shaped plate portion **42**. The tubular member **40** and the tubular hub portion **44** form a column through which the liquid is pumped.

A closure member generally designated by the numeral **45** is removably positioned on the upper end of the upper container section **20** of the percolator. Said closure includes a convex shaped body **46** having a peripheral ledge **47** whereby same rests on the upper end of the upper container section **20**. It is also provided with an enlarged annular opening within which is fixedly secured a transparent dome shaped member **48**. The dome member **48** is in axial alinement with the tubular section **40** and the hub **44** of the plate **42**, however, it has a larger radius. A handle **50** is secured by fastening means to the upper section **20** of the simulated percolator.

Secured to the bottom **18** of the lower section **14** of the percolator by suitable rivets **52** are electrical conducting members **54** which are shaped so that the upper portions thereof extend in a horizontal position and are spaced from the bottom of the percolator.

A pair of slideable contact elements **56** are slideably supported in the bottom of the lower section and said contact elements **56** pass through suitable openings in the bottom **18** and likewise pass through openings in guide members **60** secured to the bottom **18**. Each of the slideable contact elements **56** is alined with the respective conducting member **54** and is adapted to make contact therewith when the percolator rests on the base or simulated heating unit **12**, as shown in FIGURE 2. Each of the conducting members **54** is connected to the motor **32** by suitable conducting wires **62** and **63** so that when the slideable contacts **56** are in the position shown in FIGURE 2 and the simulated heating unit, as will now be described, is on, the circuit to the motor **32** will be closed to operate the propeller **36**.

The simulated heating unit generally designated by

the numeral 12 includes a hollow base 66 of generally rectangular shape in plan, having an enlarged annular central opening 68 at the top and a central downwardly arcuate shaped lip 70 extending from the top towards said central opening.

Supported within the base 66 is a simulated burner unit generally indicated at 72 which comprises an annular central portion 74 which fits within the annular opening 68 and extends upwardly thereof, as best seen in FIGURE 2, but below the plane of the top of the base. The simulated burner unit 72 has an annular recessed portion 76 to engage the underside of the annular lip 70 and then same extends horizontally outwardly and downwardly as at 77 and 78. It is secured to the base 66 by suitable fastening members 80.

The central portion 74 of the simulated burner unit 72 is provided with a pair of spaced oppositely positioned generally semi-circular shaped recesses 82 and 83, with an opening below each of said recesses. A generally semi-circular shaped plate 84 and another generally semi-circular shaped plate 85, of metal or other conducting material is suitably secured in a respective recess. Each said plate has a metal contact point 84' and 85' to be engaged by a spring metal contact member which connects the plates electrically to the batteries.

A pair of dry cell batteries are supported within the base with their poles reversed. The positive and negative poles of the batteries are connected at one end, as is well understood. The other or front front ends are engaged by spring metal electrical conducting elements 86 and 88 respectively. Conducting element 86 is suitably anchored at the bottom as at 87 and extends upwardly and is curved rearwardly to make contact with the negative pole of battery B and then curves forwardly to make contact with contact point 84' on plate 84. The other spring conductor 88 is also anchored at the bottom as at 89, then is shaped arcuately as at 90 and then continues upwardly to make sliding contact with contact point 85' on plate 85. The spring conductor 88 is adapted to make contact with the positive pole of battery A through the arcuate section 90 when the cam member, to be described, is rotated to the position shown in FIGURE 2, and to break contact when the cam is in any other position.

A shaft 92 is supported at one end on a suitable bracket 93 secured to the base. The opposite end of the shaft extends through an opening in the front wall of the base and has an indicator knob 94 thereon. Fixedly secured to the shaft 92 is the cam member 95 which engages the electrical conductor 88 when the shaft 92 is properly rotated by the knob to move the arcuate section 90 of conductor 88 to make contact with the positive pole and close the circuit from the batteries.

The conductor element 88 forms the switch for the circuit. When the knob 94 is rotated to "off" position, the cam 95 will be out of engagement with the conductor 88 and the conductor 88 will not be in engagement with the positive pole of battery A and the circuit from the batteries will be open. When the switch is in "on" position, as shown in FIGURE 2, the circuit from the batteries to the plates 84 and 85 will be closed, hence if the percolator 10 is placed thereon and the slideable contacts 56 engage the plates 84 and 85, circuit to the electric motor 32 will be closed through conducting members 54 and conducting wires 62 and 63 to operate the motor. On the other hand, with the switch 88 in open position, that is, with the electrical conductor out of engagement with the positive pole of battery A, the circuit to the motor is open, even with the simulated percolator on the simulated heating unit.

With the simulated percolator on the simulated burner and the circuit to the motor closed to operate same, the motor 32 will rotate the propellers 36 within the pump chamber 27.

The liquid in the upper container section 20 of the simulated percolator is filled to approximately the line 4—4 of FIGURE 2. The container section may be filled by removing the removable closure 45. When the propeller 36 is operating, the liquid in the container section 20 will flow through the opening 38 into the pump chamber 27 and will be pumped from the pump chamber forwardly through trough or channel 28 and upwardly through the tubular member 40, and up through the hub portion 44 which form the column. Due to the level of the liquid, only a certain amount of liquid is pumped to the top of the column and after the liquid has been pumped the continuous operation of the propeller 36 will then pump air into the pump chamber 27 and column, since no more liquid is available for pumping. As the air is pumped in the column, the liquid within the column will percolate over the top of the column then drop through the perforated openings 43 of the plate 42 and fall back into the upper container section 20.

As the blades 36 continue operating the liquid within the upper container section 20 will enter the pump chamber 27 and will again be forced into the column so that all of the liquid within the upper container section 20 will be within the pump chamber 27 and the column simultaneously, and since during the cycle of this operation there will be no more liquid to enter the pump chamber 27, air will naturally be forced therein and this will cause the liquid in the column to percolate over the top of the column. This operation is continuous so that as the liquid continues to percolate over the column it is visible through the transparent dome 48.

The percolating liquid strikes the interior of the transparent dome 48 and then drops outwardly around the apertured plate 43. The percolating action is clearly visible and simulates the percolating action of a coffee pot so that a very interesting and fascinating appearance is presented for the child. Obviously, the water is not heated in any manner but it does give the child the impression that the liquid is boiling and causing a percolating action, similar to the sight which he is familar with at home. The action is safe and harmless and all that the child has to do is to maintain the liquid to the level approximately that of the line 4—4 of FIGURE 2, so that the percolating action can be effected.

It will be understood that various changes and modifications may be made from the foregoing without departing from the spirit and scope of the appended claims.

What is claimed is:

1. A toy for simulating the percolating action of a percolator, comprising an upper liquid receiving compartment for receiving a liquid, a housing inside said compartment, a pump member within said housing, a column in communication with said housing and extending into said compartment upwardly of the normal level of liquid within the compartment, a motor positioned below said upper compartment for operating said pump member to move the liquid from said compartment into said housing and column and thereafter said pump pumping air into said housing and column to cause the liquid to percolate over the top of said column and into said compartment.

2. A toy for simulating the percolating action of a percolator, comprising a liquid receiving compartment for receiving the liquid, a pump chamber inside said compartment, a vertical column communicating with said pump chamber and extending upwardly thereof into said compartment, a pump within said pump chamber, means positioned exteriorly of said compartment for operating said pump to move the liquid from said compartment into said housing and column, thereafter said pump member pumping air into said housing and column to cause the liquid to percolate over the top of said column and back into said compartment.

3. A toy for simulating the percolating action of a percolator, comprising an upper container for receiving the liquid, a lower compartment separated from said upper

container, a pump housing inside said upper container and a pump within said housing, a vertical column in communication with said housing and extending upwardly thereof, means positioned in said lower compartment for operating said pump to move the liquid in said container into said housing and column and thereafter said pump pumping air into said housing and column to cause the liquid to percolate over the top of said column and into said container.

4. A toy for simulating the percolating action of a percolator, comprising a simulated heating unit and a simulated percolator adapted to be positioned on said simulated heating unit for completing the electrical circuit to said simulated percolator, said simulated percolator having a compartment for receiving the liquid, a pump chamber inside said compartment, a pump member within said pump chamber, a column in communication with said pump chamber, an electric motor positioned exteriorly of said compartment for operating said pump member to move the liquid from said compartment into said pump chamber and column and thereafter said pump member pumping air into said column to cause the liquid to percolate over the top of said column and into said compartment, said percolator having electrical conducting elements, means in said simulated heating unit engageable by said conducting elements on said percolator so that when same are in contact the circuit to said motor will be closed to operate said pump member.

5. A toy for simulating the percolating action of a percolator, comprising a simulated heating unit and a simulated percolator adapted to be positioned on said simulated heating unit for completing the electrical circuit to said simulated percolator, said simulated percolator having a compartment for receiving the liquid, a pump chamber within said compartment, a vertical column in communication with said pump chamber and extending upwardly thereof into said compartment and extending upwardly of the normal level of liquid within the compartment, a pump within said pump chamber, a motor positioned exteriorly of said compartment for operating said pump, said pump when operated adapted to pump the liquid from said compartment into said column and thereafter to pump air into said column to cause the liquid therein to percolate over the top of said column and back into said compartment, said simulated percolator having electrical conducting elements connected to said motor with the circuit to said motor open, said simulated heating unit having exposed electrical contacts and a battery connected to said contacts, said simulated percolator when positioned on said simulated heating unit with its electrical conducting elements in engagement with said exposed electrical contacts adapted to complete the circuit to said motor.

6. In a structure defined in claim 5 in which said simulated heating unit has a switch for opening and closing the circuit from said battery.

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